Protecting the Aquifer Since '88

HAYDEN AREA REGIONIAL SEWER BOARD

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Ken Windram, Administrator
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August 22, 2012

Ms. June Bergquist
Idaho DEQ
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

RE: HARSB'S ANTICIPATED NPDES COMPLIANCE SCHEDULE

Dear Ms. Bergquist**:**

Hayden Area Regional Sewer Board (HARSB) appreciates this opportunity to provide input regarding the compliance schedule that will be associated with EPA's reissuance of our 1999 National Pollutant Discharge Elimination System (NPDES) permit.

This letter addresses the compliance schedule required for total phosphorus, ammonia and carbonaceous biological oxygen demand (CBOD) along with other significant new permit conditions. It does not address polychlorinated biphenyls (PCBs) or dioxins, for which we understand EPA is not proposing numeric limits in HARSB's NPDES permit. HARSB does not believe PCB or dioxin limits are justified and reserves the right to challenge the imposition of any such limits. The letter also does not address lead, cadmium and zinc, constituents for which we understand the draft NPDES permit will include numeric limits based on the Idaho Department of Environmental Quality's (IDEQ) interpretation of IDAPA Section 58.01.02.055.04. Consistent with the attached analysis (Attachment A) our counsel has provided to IDEQ, HARSB disagrees that these limits are needed, and reserves its rights to challenge such limits or to seek a variance from such limits. The imposition of numeric limits for PCBs, dioxins, cadmium, lead and/or zinc may also adversely affect HARSB's ability to implement the compliance schedule discussed below. In the event limits for lead cadmium and zinc are retained, HARSB requests that IDEQ include a compliance schedule to meet them based on further input from HARSB.

The sections below discuss the following issues in turn: (1) the background of HARSB's actions to comply with the Spokane River/Lake Spokane Dissolved Oxygen Total Maximum Daily Load (D.O. TMDL); (2) a narrative describing HARSB's proposed compliance efforts; and (3) proposed language for the compliance schedule.

Background of HARSB Actions to Comply with the D.O. TMDL

HARSB serves the cities of Hayden and Hayden Lake, the Kootenai County Airport and the Hayden Lake Recreational Water and Sewer District (HLRWSD). In 2007,

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EPA proposed a draft NPDES permit for HARSB with limits that HARSB considered to be acceptable. When EPA withdrew the draft permit to allow the Washington Department of Ecology (WDOE) to revise the D.O. TMDL, it created significant uncertainty for HARSB for several reasons.

First, HARSB has substantial financial constraints. Particularly, in 2008, HARSB built a biological capacity upgrade in anticipation of the 10-year needs of our client communities. The upgrade included an additional oxidation ditch and secondary clarifier. The secondary treatment biological capacity upgrades cost HARSB well over $3 million through completion in late 2008. Second, HARSB's reuse farm (Reuse Farm) currently irrigates 100% of the effluent water when the Spokane River flow falls below 2,000 cubic feet per second (CFS). The summer time HARSB facility flows are approaching the capacity of the existing reuse farm system. Third, HARSB reclaims aerobic digested biosolids by land application on the Reuse Farm and in the State of Washington, but our solids dewatering processing cannot meet the expanded plant capacity and there is no dewatering redundancy. Finally, our outfall transmission pipe is approaching its capacity limit and is under design for near-term expansion. Expanding the transmission pipe will likely drain HARSB's cash reserves completely.

As you know, WDOE issued the final D.O.TMDL in February, 2010. Following a challenge by HARSB and others, EPA agreed, among other things, to propose phosphorus limits in the draft permits equivalent to 50 µg/L on a seasonal average at 3.2 million gallons per day (MGD). This analysis assumes HARSB will receive its full allocation based on the settlement with EPA, and that trading and/or offsets will be available options. We further assume that HARSB will be given the full benefit of any approved bio-availability studies showing that not all of the phosphorus in HARSB's discharge affects dissolved oxygen levels in the Spokane River.

For several reasons, the limits required by the D.O. TMDL necessitate a compliance schedule. For one thing, the 50 ug/l seasonal average at 3.2 mgd is at the limit of technologically achievable levels. To reach these levels, HARSB will implement a phased design and construction approach will involve the following steps to best assure compliance: phosphorus treatment design, pilot testing, design updates, new technology equipment construction as well as operation testing in a multi-step process. In addition, we anticipate the lower ammonia and/or CBOD limits in the new NPDES permits could require HARSB to install additional treatment technology beyond what will be needed for phosphorus. Only detailed pilot testing can determine specific performance to meet the new D.O. TMDL criteria. HARSB serves the cities of Hayden and Hayden Lake, the Kootenai County Airport and the Hayden Lake Recreational Water and Sewer District under an Idaho joint powers agreement government entity and has no bonding authority under Idaho law. Therefore, HARSB does not control its funding to any significant extent, and requests the maximum flexibility permitted by law to ensure that the necessary funding is in place before HARSB is required to construct the treatment facilities.

A major change with the D.O. TMDL and the settlement expanded the 50 µg/L compliance period outside of the growing season. This change dramatically devalues

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our reuse program and the reuse expansion plans envisioned by the Rathdrum Prairie Wastewater Master Plan (RPWMP). The stringent 2010 WLAs now extend four months longer than in 2007 and at least three months beyond our region's growing season. In addition, the Rathdrum Prairie Special Resource Aquifer in Idaho includes a non-degradation provision that does not allow irrigation beyond the growing season. Due to these restrictions, HARSB must rely more heavily on river discharge and use of the most advanced technologies to meet its expected effluent limits. Water reuse will only provide a modest advantage for diverting a small portion of our oxygen-demanding constituents during summer months so they do not count against us for the entire permit seasonal averaging period. HARSB reuse will now be even more expensive and less practical because of the additional land and storage requirements, while actually providing less capacity benefit.

We continue to work with WDOE, EPA, the Spokane Tribe, and other permit holders to incorporate the bio-availability study results of various forms of phosphorus in the Spokane River system. The University of Washington discovered that the EPA method for Total Phosphorus Test which the acidification / digestion step could be measuring Phosphorus that may not be available for the plants in the Spokane River or Lake Spokane as dissolved oxygen depleting components. We feel strongly that the EPA Method for Total Phosphorus Test does not represent the actual Dissolved Oxygen depleting Phosphorus component. The Total Phosphorus Test needs to be replaced with a more accurate phosphorus dissolved oxygen depleting measuring test.

Those familiar with municipal (public) systems recognize that each entity has its own unique situations and local constraints to meet compliance. Those challenges include financing through sewer fee adjustments or public-approved bond elections, local regulatory approvals, treatment system design and construction procurement all while maintaining full-time, on-going wastewater treatment operations. HARSB is committed to protecting the water quality in the Spokane River; however, enforcing the most stringent phosphorus limits in the nation, in one permit cycle, would place an impossible requirement on HARSB. Therefore, the schedule below outlines a phased approach with achievable steps to meet the anticipated final permit limits over a 10-year time frame.

Narrative of Compliance Efforts

The following narrative describes the efforts HARSB plans to undertake to implement the anticipated phosphorus, ammonia and CBOD limits along with other permit requirements. This narrative is significantly more detailed than would be appropriate in a compliance schedule, but gives IDEQ an idea of HARSB's detailed implementation strategy. Of course, the details may change in compliance with the approved compliance schedule as implementation proceeds.

Year 1: EPA Plans Development, Funding Approval and Facility Phase 1 Design.
During the first year, HARSB will prepare the sampling Quality Assurance Project Plan (QAPP) and implement it within 90 days after the effective date of the final permit.

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HARSB will prepare Operation and Maintenance Plan (O&M) and implement it within 180 days after the effective date of the final permit. HARSB will prepare the Phosphorus Management Plan (PMP) during the first year and implement it within 18 months after the effective date of the final permit. HARSB will prepare the Emergency Response and Public Notification Plan (ERPNP) and implement it within 180 days after the effective date of the final permit. HARSB would begin to develop the Undesirable Pollutants and Industrial Users Control Plan. HARSB would prepare a Toxic Management Plan (TMP) within 180 days after the effective date of the final permit. The TMP must be implemented within one year after the effective date of the final permit. The HARSB Facility will meet the new NPDES permit conditions on the effective date of the final permit except for the constituents outlined in the compliance schedule. New surface water and effluent water sampling, testing and monitoring will also begin during the first year after the effective date of the final permit.

As part of the compliance schedule, HARSB will prepare a Facility Plan that addresses expected growth rates, changes in permit conditions, design parameters, and compliance conditions for the next 10-20 years. HARSB will also update the financial analysis to support rate increases and/or a bond election needed to fund projected improvements.

When the Facility Plan is accepted and approved by IDEQ and EPA, HARSB will conduct public hearings for rate and fee increases to fund the BNR, and reuse expansion work, as well as re-apply for State Revolving Fund loans. The sewer rate and fee increases plus external financing sources must be approved and in place before construction contracts are signed. HARSB does have funding to begin Phase 1 for the design of the new headworks, flow equalization and BNR treatment process to further reduce oxygen demanding substances in our effluent. HARSB will continue 100% reuse in the summer when Spokane River flows are below 2,000 CFS during the compliance period. Therefore, we will expand the transmission, storage, irrigation, crop production, and monitoring of the Reuse Farm, as required.

Year 2: Phase 1 Construction Starts. By the end of the first year, the plan is for funding to be secured for the Phase 1 Headworks, flow equalization and BNR construction; the design would be completed and approved by IDEQ and EPA. Phase 1 construction bidding would proceed so that BNR construction could begin in Year 2 after the winter conditions. HARSB will also submit to EPA and IDEQ its first annual report on the Toxics Management Plan and Phosphorus Management Plan.

Year 3: Phase 1 Construction Completed. We expect the third year of the compliance schedule will see the completion of the Phase 1 construction of the headworks, flow equalization and BNR treatment systems. Phase 1 start-up, testing, BNR operation optimization and full-scale operation of the HARSB BNR facilities is also expected to occur. The new BNR treatment system will be a fundamental change in operations that will drastically alter the physical layout of the current facility as well as the plant biological operations. It will require at least a year of BNR operations to

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optimize the process control under the operating conditions of four weather seasons. Construction of expanded reuse facilities is expected to begin during the summer.

Year 4: Phase 1 BNR Operation, Evaluation, Tertiary Pilot Scale Design and Procurement. The first year of BNR treatment optimization will provide the data for selecting the final tertiary treatment system. HARSB will pilot test the most promising phosphorus removal technologies to meet the final permit limits on the new optimized BNR effluent. Pilot testing equipment financing, design, procurement, and pilot plant performance plan will be prepared and submitted concurrently with the optimization of the BNR facilities. Phosphorus removal will likely utilize various combinations of chemical addition, mixing, flocculation, settling and filtration. Again, HARSB would evaluate the need for interim fee and/or rate adjustments to support the pilot plant design, construction and operation. HARSB's biological phosphorus removal and oxidation ditch technology must be pilot tested for a year to evaluate compliance with the very low projected effluent limits. Since treatment processes can dramatically change with the character of water that will feed the pilot units and full scale facility, the tertiary treatment system planning, design and construction will follow HARSB's pilot work results. Construction, start-up and operation of the pilot-scale installation is expected to start by the end of the fourth year. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

Year 5: Phase 1 Operation, Tertiary Pilot Construction and Start-up. Operation of the pilot-scale tertiary treatment system testing is expected to occur through the fifth year. The application for the next NPDES permit must be submitted no later than 180 days before the expiration date of the current permit. Earlier timeline elements must be approved and completed to move forward with the facility upgrades. BNR operation and growing season reuse will continue with gathering of phosphorus bioavailability and biosolids production data, as necessary. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

Year 6: Phase 1 Operation, Tertiary Pilot Completed, Results Reviewed. Pilot-scale data analyses for the various tertiary treatment combinations during the HARSB pilot-scale tertiary treatment systems (chemical types, mixing, enhanced settling, and filtration) will be evaluated. The data will be compiled and submitted in report form for approval by IDEQ and EPA. The report will include information on impacts to biosolids processing and disposal, as well as the bioavailability of various phosphorus species, effectiveness in meeting WLAs, costs of the treatment options and effects of chemical addition on the potential ultraviolet light or ozone disinfection systems. HARSB will update the Facility Plan with any changes in technology, performance or costs that have been determined during the first five years of effort. The tertiary treatment plant design would begin. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and Phosphorus Management Plan.

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Year 7: Phase 2 Tertiary Design Completed. The pilot-scale tertiary treatment technology plant design will be finalized and submitted to EPA and IDEQ for approval. HARSB must secure necessary funding prior to construction contracts being signed. Assuming the funding is received, the construction of the tertiary improvements will begin in the latter part of Year 7. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

Year 8: Phase 2 Tertiary Construction. In the eighth year construction of the tertiary treatment plant improvements will be completed, assuming that the funding efforts were successful in Year 7. If funding is not approved in Year 7, HARSB will attempt another public outreach effort and/or seek an emergency declaration and judicial ruling on the "ordinary and necessary" nature of the proposed expenditures. BNR and growing season reuse will continue with gathering of bioavailability and biosolids production data, as necessary. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

Year 9: Phase 2 Tertiary Operational Testing. Assuming that funding is in place, the ninth year of the compliance cycle will see operation of the HARSB tertiary treatment plant improvements necessary to meet the D.O. TMDL. All additional work to optimize the processes must occur with full-scale demonstration of process performance by late in Year 9 to meet the final permit limits. Year 9 facility operation has little to no schedule flexibility to account for unforeseen obstacles from earlier activities such as securing adequate and timely financing. Too many previous activities rely on sequentially completing multiple tasks to expect complete permit compliance in Year 9. HARSB's ability to divert some of their flow to the Reuse Farm will be critical to assure compliance in Year 10. Filter rates, cleaning cycles, side-stream impacts, biosolids production, and phosphorus bioavailability data will be evaluated. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

Year 10: New Tertiary Treatment System Fully Operational. Given the timely approval of funding through each phase, Year 10 is expected to be the first year of full compliance. It would also be the year that HARSB reapplies for its NPDES permit no later than 180 days before the expiration date of the current permit.

As the compliance schedule comes to a close, HARSB expects to actively participate with WDOE and the Spokane River Stewardship Partners to reevaluate the TMDL and the needed water quality improvements in the Spokane River and Lake Spokane. Additionally, HARSB will work with its member entities to re-evaluate their growth projections and determine the steps necessary to provide reliable capacity for their citizens. For example, by Year 10, reuse projects that protect the Special Resource Aquifer may be more readily accepted and documented. Further, the bioavailability of phosphorus after these aggressive tertiary treatment efforts may prove to be a small fraction of the total phosphorus and more protective of the receiving water than previously understood. HARSB will submit to the EPA and IDEQ an annual report on the Toxic Management Plan and the Phosphorus Management Plan.

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Proposed Idaho 401 Certification Compliance Schedule Language

Based on the discussion above, HARSB would support the following compliance schedule language in the Idaho 401 Certification and the draft NPDES permit:

1. A 10-year schedule of compliance for phosphorus, ammonia and CBOD.
2. Interim requirements for schedule of compliance
    a. By one (1) year after the effective date of the final permit, the permittee must provide a Facilities Plan to EPA and IDEQ outlining the studies and schedule required to achieve final effluent limitations. This schedule must include a timeline for fully scalable pilot testing.
    b. By the end of the four (4) year after the effective date of the final permit, BNR phosphorus removal technologies will have been designed, constructed, and completed one (1) full year of operation. The design of the tertiary treatment pilot test equipment will be started. The permittee must provide written notice to EPA and IDEQ a report of the results to date.
    c. By six (6) years after the expiration date of the final permit, the permittee must provide to EPA and IDEQ a revised Facilities Plan including a plan for implementation including the final tertiary treatment **based on results of pilot testing that has been submitted by HARSB and reviewed by IDEQ and EPA**.
    d. By eight (8) years after the effective date of the final permit, the permittee must provide written notice to EPA and IDEQ that design and construction has been completed for the tertiary treatment facilities necessary to comply with the final effluent limitations. Provided, however, that the requirements in paragraphs a. and c. shall be extended by (1) one year if the permittee has exercised best efforts but has been unable to obtain financing within seven (7) years.
    e. By nine (9) years after the effective date of the final permit, the permittee must provide written notice to EPA and IDEQ that the HARSB facilities necessary to comply with the final effluent limits for phosphorus have completed startup evaluation and optimization of phosphorus and comply with final effluent limits.
    f. By ten (10) years after the effective date of the final permit, the permittee must have the tertiary phosphorus treatment operational and comply with final effluent limits.
    g. By four, six and nine years after the effective date of the final permit, the permittee must submit to EPA and IDEQ reports of progress, which outline the progress toward achieving compliance with the total phosphorus effluent limitations. At a minimum, the reports must include:
        i. An assessment of the previous year of effluent data and comparison to the effluent limitations.
        ii. A report on progress made towards meeting the effluent limitations.

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iii. A report on progress made toward completing remaining interim requirements of this compliance schedule.
iv. Further actions and milestones targeted for the upcoming year.

h. While the schedule of compliance specified in the HARSB Idaho 401 Certification Part I.C.2 are in effect, the permittee must comply with the following interim effluent limitations and monitoring requirements:

Summary:

HARSB recognizes the need to move forward to protect the Spokane River, Lake Spokane and our Rathdrum Prairie Aquifer and is prepared to take these steps. These efforts will not be easy and they will be expensive. We must take the steps in a thoughtful and proactive manner that allows for review of data and optimization of facilities and that fully engages the public with their costs, benefits and full impacts on our community. We believe that we have laid out a compliance schedule that will accomplish these goals in a responsive and responsible manner. We look forward to your comments and working with EPA and IDEQ to achieve our mutual objectives for the public's benefit.

Sincerely,

Ken Windram, Administrator
Hayden Area Regional Sewer Board

cc: Dan Redline – IDEQ
HARSB Board

Enclosures;

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